

IN THE SPECIFICATION:

Please insert the following new paragraph and headings on page 1, prior to line 7:

CROSS-REFERENCE TO RELATED APPLICATION

This application is the U.S. National Stage of International Application No. PCT/IB2002/003890 filed September 20, 2002 and published in English on April 29, 2004 under International Publication No. WO 2004/036797 A1.

BACKGROUND OF THE INVENTION

1. Technical Field

On page 1, on line 13, please insert the following heading and amend the paragraph beginning on line 14 as follows:

2. Discussion of Related Art

A person listening to a radio broadcast often has need for additional information about current programs, e.g. the song playing ~~in~~on the radio. There are some known methods of providing this:

- The original solution is that the radio DJ recites the name of the music track and maybe the artist at the end of a track
- Different radio stations are able to provide information via ~~„radio data system“~~ "radio data system" (RDS) known from car radios
- Different internet radio stations are able to provide information about their current show through their home page
- Nokia™ has published a collaboration with Capital Radio™ (London) using an interaction and information service via SMS

On page 1, please amend the paragraphs beginning at line 32 through page 2, line 7 as follows:

The main drawback of the Radio Data System is that the standard RDS radio display is too small to provide a sufficient space to display the name of the radio station, the artist and the name of the actual track. The information is provided in a ~~newscaster-~~

~~fashion~~newscast-fashion as text on a very small display. Especially in car radio applications, the reading of the ~~newscaster~~text consumes time and distracts the attention of the driver from the traffic while driving. Another drawback is that actually only a few radios are equipped with an RDS system.

Different Internet radio stations are able to provide information ~~on~~on their current show through their home page. The use of the Internet includes the use of a two way communication medium, which in turn provides a ~~fully-fledged~~full-fledged interactivity or adds interactive features to a conventional radio station. With the use of an additional two-way communication channel, interactive features are added to the functionality of a conventional radio station. The main drawback of this solution is that the user needs a computer and has to be online which is in fact time, energy and money consuming.

On page 2, please amend the paragraph beginning at line 18 as follows:

The SMS (Short Message Service) based information service has the drawback that the user has to request the information by sending an SM to the radio station, which is expensive. Another disadvantage is the limited input device (the ITU-T keypad) which makes it difficult, as the SMS has to be typed first before being sent. The short message service is only capable of delivering one single item of information.

On page 2, line 33, please add the following heading:

DISCLOSURE OF INVENTION

On page 3, please amend the paragraphs beginning at line 7 through page 4, line 10 as follows:

According to a first aspect of the present invention a method is provided for delivering additional information data related to the contents of an actual radio broadcast from a radio station to terminal devices, wherein the terminal devices are connected to a server in a wireless communication network. The method may be used in a server in a wireless network and comprises the reception of a data transmission from said radio station. Said data transmission comprises additional information data related to the actual contents of a radio broadcast from said radio station. The additional information data can comprise information such as the name of artist, composer or the name of a piece of music, the author and the name of a radio play, and other background information. The

information data can be plain text, as e.g. in the case of RDS/SMS compatible information, but can also comprise graphics, pictures and advertisements. Another possibility is to use a URL link. This can be embodied in a later release of presence in ~~the~~a dynamic phonebook. This opens up the possibility of interaction with a web browser if even more info is required. The additional information can even comprise a small acoustic intro of the song, or, an animated picture sequence like used in the magic lantern, or even a small video sequence. After the reception of the transmission, the server can store or update the information in the server.

Following the reception of said transmission, the server determines mobile terminal devices to be supplied or updated with said additional information. This can be embodied by means of a relation table comprising a list of all terminal devices to be delivered with said additional information. Then, the server generates an updating message for each of said determined terminal devices comprising said additional information. The server can also generate a single updating message for all or groups of the determined terminal devices comprising said additional information data, and adapt only the respective addresses. The size, the format, and even the information contents of the message may be custom-generated for each of said determined terminal devices in dependence of the properties of the destination device or information stored in the relation table. The messages can be generated in dependence ~~of~~on a transfer protocol used in said wireless communication network. Finally, the server sends said generated messages to each of said terminal devices via said wireless communication network.

It is to be noted that the single transmission ~~needs~~need not ~~to be~~ requested or confirmed, but can be received as in the case of a one-way pager. The terminal devices may confirm the transferred message. Therefore, it is possible that the server further receives a message from the wireless network or a terminal device to stop the transmission. It may be noted that the time required to deliver the message to the terminal device should only require a few seconds, and should not exceed a minute. A fast delivery of the messages is required as the actual radio broadcast, e.g. a piece of music has an average duration of a few minutes, and in case of a longer delivery time the additional information is no longer up to date and invalid concerning the contents of the actual radio broadcast transmission.

On page 5, please amend the paragraphs beginning at line 17 through line 30 as follows:

In yet another example embodiment of the present invention the method further comprises the reception of a transmission indicating that said mobile terminal device is no longer to be supplied with said additional information. This transmission can be originated from the device itself, to cross off or delete the subscription to said service. In another case this information can be originated from a server of said wireless network indicating that the terminal device is ~~not~~no longer connected to said network.

According to another aspect of the present invention, a method for displaying additional information data related to the actual contents of a radio broadcast from a radio station is provided. In this method said additional information is received from a server via a wireless communication ~~network, and comprises~~ network and comprises: receiving said radio broadcast from said radio station via a wireless broadcast channel, receiving a message comprising said additional information data from a server connected to said wireless communication network and displaying said additional information from said received message.

On page 7, please amend the paragraph beginning at line 2 as follows:

In yet another example embodiment of the present invention, the method further comprises the displaying the name of said determined radio station, and said received additional information together on a display. Both information can be displayed in a ~~„split screen“~~ "split screen" fashion, and in a composed graphic comprising information received from a radio module and a wireless network module.

On page 10, line 10, please insert the following heading:

BRIEF DESCRIPTION OF THE DRAWINGS

On page 10, line 22, please insert the following heading and amend the paragraphs beginning at line 23 through page 11, line 10 as follows:

BEST MODE FOR CARRYING OUT THE INVENTION

Figure 1 shows a high level outline of the architecture of the system. There are three basic elements, the user terminal 2, the Presence Server 8 and the radio station infrastructure 6. Other elements are omitted for simplicity. The protocol 16 between the terminal 2 and the Presence Server 8 is the Wireless Village Client Server Protocol

(CSP). The protocol 16 between the terminal 2 and the Presence Server 8 can also be embodied as SIP SIMPLE. The protocol 14 between the Presence Server 8 and the radio station infrastructure 6 is the Presence Server Web Services interface. In the figure, the terminal 2 ~~comprises~~includes a display 4. The Presence Server 8 is connected to a Wireless Village transmission station 10. The radio station infrastructure 6 is transmitting a radio broadcast 12. The display 4 of the terminal is depicting the name of radio station that is actually received. In a classical multi purpose device this can be achieved by a RDS or a manually generated frequency/Radio Station correlation, as in the case of phone book entries of a mobile phone. To implement the present invention a connection 14 between the radio station infrastructure 6 and the Presence Server 8 of a wireless network is required. The wireless network is necessary to ~~keep up~~enable communication and to permit the mobility of the mobile multi-purpose terminal device 2.

Figure 2 shows a simple use case of a radio station 6 playing a track ~~20.1~~20.2 and then updating the track info ~~22.222.3~~, 24.4 e.g. in the ~~subscriber's~~subscriber's phonebook. The user subscribes to a track information service by transferring or notifying ~~(18.3)~~(18.1) the server 8 to subscribe to a presence service of the radio station 6. With the broadcast of a new track ~~20.1~~20.2, the radio station 6 transmits changed presence information ~~22.222.3~~ to the presence server 8. Following that, the presence server determines all terminal devices having subscribed to this service and sends messages 24.4 to all terminal devices containing additional information of the actual track. The track info is updated via the Wireless Village transmission station 10 using the Wireless Village free text attribute. The track info also updates the logo attribute in the mobile terminal device 2 to place a picture 26 of ~~the~~a band playing.

On page 11, please amend the paragraph beginning at line 20 as follows:

This invention presents a way to provide additional information of the current radio show (or other broadcast) by the means that the radio station is the presentity in the presence server. The listeners who want to add the radio station to their "buddy list", "dynamic phonebook" etc. are able to check the radio station status ~~when ever~~whenever they want to. The radio station status comprises the actual track information and additional features. The status is updated to their terminals automatically as known from the SIP SIMPLE or Wireless Village protocol.

On page 11, please amend the paragraph beginning on line 32 as follows:

In addition to the transfer of the additional ~~information~~information, the wireless interface to the radio station via the server can be used to provide additional interactive features to:

On page 12, please amend the paragraphs beginning at line 9 through page 13, line 5 as follows:

The current invention improves earlier solutions in terms of usability and convenience. To give a comparison with the SMS based service, the user in that service has to send an individual SMS for *each* track he requests information about. Moreover, for each request the user has to type in his request as an SMS message. Then, the information returned is restricted to a ~~text-only~~text-only format.

Figure 3 ~~is depicting~~depicts the architecture of a terminal device according to one embodiment of the present invention. The terminal device 220 comprises a display 4, a controller 34 connected to the display. The controller 34 is further connected to a memory device 38, to a wireless network module 32, a broadcast receiver module 30 and to a telephone module 36. The controller 34 is also connected to a user interaction interfaces (not shown) such as keys, keypads, microphones loudspeakers and the like to control the modules 30 to 38. The centralized architecture of this embodiment enables the device to use only a single memory module 38 to store all the relevant data from the telephone module 36, the wireless network module 32 and the broadcast module 30. This enables the device 2 to simultaneously display data from the radio module 30 (i.e. the station name depicted in upper area of the display 4 indicated by a dotted arrow) and the additional information received via the wireless network module 32 (i.e. the picture 26 depicted in the lower area of the display 4 indicated by a dotted arrow). The present invention is not restricted to the above displayed architecture, but can be modified in different ways, to be extended with additional modules for receiving TV broadcasts, play and record media, digital cameras or video recorders and the like.

The usage of the invention is much easier than the one with SMS messages. Also compared to the Internet Radio systems it does not require a continuous data connection, which is ~~a quite quite a resource-wasting~~resource-wasting method particularly in mobile solutions. The information is pushed to the terminal only when

the presence information has changed.

This application contains the description of implementations and embodiments of the present invention with the help of examples. It will be appreciated by any person skilled in the art that the present invention is not restricted to details of the embodiments presented above, and that the invention can also be implemented in another form without deviating from the characteristics of the invention. The embodiments presented above should be considered illustrative, but not restricting. Thus, the possibilities of implementing and using the invention are only restricted by the enclosed claims. Consequently, various options of implementing the invention as determined by the claims, including equivalent implementations, also belong to the scope of the invention.